

WHAT IS CLAIMED IS:

1. A method for recognizing commands in natural language, comprising the steps of:

comparing an utterance to a plurality of handlers;

5 identifying a winning handler for decoding a command from the utterance, wherein the winning handler is identified by arbitration between handlers; and

decoding the command in accordance with the winning handler.

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2. The method as recited in claim 1, wherein the step of identifying includes resolving ties in the arbitration between handlers by employing a tie-breaker handler.

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3. The method as recited in claim 2, wherein the tie-breaker handler poses a question to a user to determine the winning handler.

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4. The method as recited in claim 1, wherein the

handlers include an enabled or a disabled state and further comprising the step of presenting the utterance to enabled handlers.

5 5. The method as recited in claim 4, further comprising the step of submitting the utterance to disabled container handlers to ensure submission of the utterance to child handlers.

10 6. The method as recited in claim 1, further comprising the step of submitting unresolved utterances to winning handlers of a previous utterance for decoding.

15 7. The method as recited in claim 1, further comprising the step of maintaining a database of a history of handler selections.

20 8. The method as recited in claim 7, wherein the history includes time based ordering and ontological information.

9. The method as recited in claim 7, further comprising the step of resolving unresolved utterances by employing information stored in the database.

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10. The method as recited in claim 1, wherein the step of decoding further includes executing a command in accordance with the winning handler, responsive to the utterance.

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11. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method step for recognizing commands in natural language as recited in claim 1.

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12. A method for recognizing commands in natural language, comprising the steps of:

providing a plurality of handlers trained to be responsive to given utterances;

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arbitrating against other handlers to determine a

winning handler for an utterance; and

decoding the command in accordance with the winning handler.

5 13. The method as recited in claim 12, further comprising the step of resolving ties in the arbitration between handlers by employing a tie-breaker handler.

10 14. The method as recited in claim 13, wherein the tie-breaker handler poses a question to a user to determine the winning handler.

15 15. The method as recited in claim 12, wherein the handlers include an enabled or a disabled state and further comprising the step of presenting the utterance to enabled handlers.

20 16. The method as recited in claim 15, further comprising the step of submitting the utterance to disabled container handlers to ensure submission of the utterance to

child handlers.

17. The method as recited in claim 12, further
comprising the step of submitting unresolved utterances to
5 winning handlers of a previous utterance for decoding.

18. The method as recited in claim 12, further
comprising the step of maintaining a database of a history
of handler selections.

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19. The method as recited in claim 18, wherein the
history includes time based ordering and ontological
information.

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20. The method as recited in claim 18, further
comprising the step of resolving unresolved utterances by
employing information stored in the database.

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21. The method as recited in claim 12, further
comprising the step of executing a command in accordance

with the winning handler, responsive to the utterance.

22. A program storage device readable by machine,
tangibly embodying a program of instructions executable by
5 the machine to perform method step for recognizing commands
in natural language as recited in claim 12.

23. A system for recognizing commands in natural
language, comprising:

10 a speech recognizer for decoding language and semantic
information in utterances provided by a user; and

a dialog manager comprising a hierarchical ordering of
handlers, each handler being trained to be responsive to
decoded utterances wherein the dialog manager manages
15 arbitration between the handlers to determine a winning
handler for an utterance and decodes the command in
accordance with the winning handler.

24. The system as recited in claim 23, wherein the
20 handlers include at least one tie-breaker handler for

resolving ties in the arbitration between handlers.

25. The system as recited in claim 24, wherein the tie-breaker handler poses a question to a user to determine the winning handler.

26. The system as recited in claim 23, wherein the handlers include an enabled or a disabled state and the utterance is presented to enabled handlers or disabled container handlers with child handlers.

27. The system as recited in claim 23, further comprising a database for storing a history of handler activities.

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28. The system as recited in claim 27, wherein the history includes time based ordering and ontological information.

20 29. The system as recited in claim 27, further

comprising at least one clarification handler, which
resolves unresolved utterances by employing information
stored in the database.